CITY OF SANTA BARBARA DESALINATION FAQs

How much does desalination cost?
The capital costs to reactivate the plant capacity of 3,125 acre-feet per year[1] (AFY) are estimated at $55 million. Annual operating costs are estimated to be about $4.1 million at full production (for 3,125 AFY of water supply), and about $1.6 million in standby ready-state mode.

How will the desalination costs be financed?
The City plans to take out a State Revolving Fund Loan to finance the $55 million capital cost to reactivate the desalination plant. The terms of this loan are anticipated to be a 20 year payback period with a 1.6 percent interest, which results in annual payments of approximately $3.2 million. Due to better loan terms, and a design concept that will save in operating costs, the annual cost of desalination is less than originally estimated.

What percentage of the City's water supply will the desalination plant provide?
Based on the City's 2011 Long-Term Water Supply Plan, the City would use the facility as a drought relief measure at a capacity of 3,125 AFY, which is approximately 20-30 percent of annual demands, which vary depending on weather conditions. If the desalination plant is reactivated, extraordinary water conservation from residents and businesses will remain critical to meeting water demands.

When could we start receiving water supply from desalination?
While the core infrastructure has been maintained, the desalination plant has been inactive for 22 years. Since desalination technology has changed considerably over the past two decades, it is currently estimated that it will take a little over one year to reactivate the plant (for design and construction). If a contract to reactivate the plant is awarded in June 2015, water supply from the desalination plant is anticipated by fall 2016.

What is the maximum permitted capacity of the desalination plant?
The City's permits allow for up to 10,000 AFY of water supply. The original plant constructed in 1991 had 7,500 AFY of treatment capacity. Current proposed water rates assume reactivation at a plant capacity of 3,125 AFY. An increased plant capacity, up to 7,500 AFY, is currently estimated to cost an additional $30 million and would require additional water rate increases.

Is the desalination plant a regional facility?
When the temporary desalination plant was constructed in 1991, Montecito Water District (Montecito WD) and Goleta Water District (Goleta WD) were partners in the project. In order to make the facility a permanent water supply, an extensive environmental review and permitting process was required. When the review and permitting efforts were completed in 1996, Montecito WD and Goleta WD declined to participate in the project further and did not pay for the process of making the facility permanent. Therefore, the City is the sole owner of the plant and has continued to renew its permits over the years.

Why did the City put the plant into long-term storage?
When the original facility was constructed in 1991, the desalination process technology only allowed relatively short periods of inactivity before the reverse osmosis membranes (used for desalination) began to deteriorate. Due to sufficient surface supplies and significantly reduced demand following the drought, the City put the plant into long-term storage since it was the most cost-effective option for ratepayers.

What happened to the money when the City sold off the original membranes?
When the desalination plant was put into long-term storage, a portion of the membrane treatment equipment was sold, reducing the capacity of the original regional facility to the capacity required for the City's needs only. The sale helped to recuperate the City's costs associated with permitting of the permanent facility, and also reduced the long-term costs to rate payers for maintaining the facility.

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[1] An acre-foot is equivalent to approximately one football field covered with one foot of water. There are 435.6 hundred cubic feet (HCF) in one acre-foot.

Will the desalination plant be operated after the drought?
Over the years, treatment technology has significantly improved requiring less energy and allowing longer periods of inactivity without deterioration. Therefore, the City does not expect to put the reactivated facility back into long-term storage mode after the current drought. Instead, the plant may be minimally operated to keep it in a ready-state standby mode for future droughts or other supply emergencies.

What are the environmental impacts of desalination?
The environmental effects of the desalination plant were analyzed in two separate Environmental Impact Reports. The first of those reports, prepared in 1991, analyzed the construction and operation of the desalination plant as a temporary emergency facility (1991 EIR). Subsequently, the City decided to incorporate the desalination plant into a permanent facility that would produce water supplies that were included in the City's Long-Term Water Supply Plan (LTWSP). The second EIR, prepared in 1994, analyzed the operation of the desalination plant as a permanent facility (1994 EIR). These EIRs identified potentially significant impacts related to noise, cultural resources, air quality, water quality, and aesthetics. However, all potentially significant impacts were mitigated to less-than-significant levels through project modifications and/or mitigation measures. Therefore, both EIRs concluded that the desalination plant would not have a significant impact on the environment.

What does the intake look like?
The City's existing intake is an open ocean intake that uses screens to reduce environmental impacts of marine life becoming entrained (taken into) the treatment plant. As part of the reactivation project, the City has volunteered to update the screen technology to meet the standards that the State recognizes as "Best Technology Available" (BTA). The updated screen technology uses 1 millimeter openings, and water entering the intake will be flowing at 0.5 feet per second, which is slower than the natural current of 1 feet per second.

How salty is the brine waste that is discharged back to the ocean?
As a result of the desalination process that removes salt from water, a portion of the seawater drawn in from the City's intake will be concentrated into a salty brine waste stream that is nearly twice the salinity level of seawater, and requires disposal. The desalination plant's brine stream will be discharged to an ocean outfall that is shared with the El Estero Wastewater Treatment Plant. The City hired a consultant from SCRIPPS Institution of Oceanography to model brine discharge under a range of conditions. This brine study concludes that the City can comply with the discharge requirements of their existing permit and proposed, future regulations.